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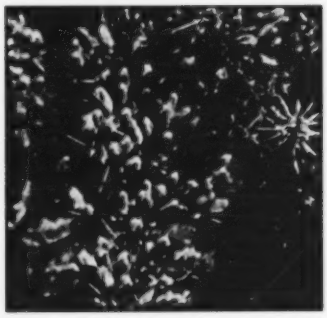
Ministry of Forests and Range

Gorse

The spiny competitor

Back to the Forest Practices Branch

Gorse is a spiny shrub from the Mediterranean region of western Europe. This shrub has been introduced to other countries where it competes very successfully with native vegetation. Gorse is suited to mild maritime climates like those of southwestern B. C. It readily competes for well-drained areas where the soils have been excessively disturbed or are naturally poor. Gorse has become increasingly prevalent on roadsides, newly harvested and other disturbed sites in south coastal areas. There is concern that gorse is spreading and could pose a greater threat to forests and other resources.



Gorse originates in the Mediterranean region of western Europe

What is gorse?

Gorse is a dense, spiny, dull greyish-green shrub that typically grows to about three metres in the Pacific Northwest. It has small leaves that are generally shorter than its conspicuous spines. From early spring, yellow pea-like flowers develop in clusters on the ends of its branches becoming hairy black seed pods by late summer. A typical shrub produces about 8000 seeds annually. Gorse seed can lay dormant in the soil for up to 40 years and still germinate. Soil disturbance during road building and tree harvesting present opportunities for the successful germination of seed.

Gorse typically grows to a height of about three metres in southwestern B.C.

Like many introduced plants, gorse is well adapted to survive in a number of environments. The deep roots and small leaf area allow gorse to establish in dry areas. As gorse tolerates moderate shading, it can thrive under a partial tree canopy or in the open. Unlike many plant species, it is able to 'fix' or remove nitrogen from the air. This adaptation allows it to grow in poor soils.

When established, gorse produces large amounts of litter. Litter can accumulate and acidify the soil, excluding plants that do not tolerate acid conditions.

Gorse is also well known for its longevity. In New Zealand, gorse can live up to 30 years, reaching heights up to seven metres. Stump diameters of the older shrubs range between two and 10 centimetres with occasional older stems greater than 20 centimetres. It is not uncommon for gorse to become top heavy and topple when around 12 to 15 years old.

Origin and spread of gorse

Gorse originates in western Europe. It was introduced into New Zealand by settlers and sold by seed merchants and nurseries for private cultivation until the 1890s. Since then it has spread to cover more than three per cent of the total land area in New Zealand, including significant agricultural areas and forest plantations.

In North America, gorse was first introduced in south coastal Oregon. It has spread as far south as San Diego County and north through Washington State into coastal British Columbia. It is thought that it arrived in B.C. 20 to 40 years ago.

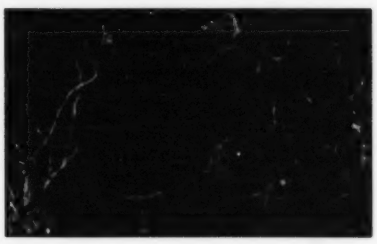
Today, gorse is found in B.C. at lower elevations on sites with mild maritime climates and seasonal, but not terribly severe, summer droughts. A significant area along the B.C. coast including Southern Vancouver Island, the Gulf Islands and the Queen Charlotte Islands, is climatically suited to gorse. There is concern that further expansion of its range along the coast may be possible.

Is gorse a problem?

With its aggressive colonization and spiny nature, gorse can make a site virtually inaccessible. It also excudes most native plants from the sites it inhabits

Gorse is a very aggressive colonizer and appears to be well suited to B.C. coastal climatic conditions far beyond its present known range. Due to its spiny nature, it has the potential to make a site virtually inaccessible to everyone. In its native habitat, there are insects adapted to diminishing the amount of seed reaching maturity. In B.C., however, there are no natural enemies to control it.

Gorse contains a high concentration of oil in its branches. As a result it can be a fire hazard where it is abundant on dry sites. Many areas of coastal B.C. with gorse thickets are potential sites for wildfires that could cause property damage.



Gorse may be a fire hazard where it occurs in dense thickets on dry sites

This shrub also threatens the biodiversity of areas where it establishes. It tends to exclude native vegetation by establishing itself quickly with a carpet of individual plants. Once established, gorse can successfully occupy a site indefinitely. As it is hardier than many of our native plants and establishes easily on dry sites and poor soils, gorse has probably not reached the limits of its range in our province.

How is gorse spread?

Gorse seed can scatter to adjacent areas when its pods burst and eject the seeds. The seeds can also be spread by animals, water and machinery. It is likely that seeds are dispersed by vehicles that pick them up in mud and gravel along roadsides and distribute them along roads adjacent to forest land. Seeds are also readily transported by water as

Flowers of a typical gorse plant. Gorse can produce about 8000 seeds per year. In its native territory local insects eat the seed, reducing the threat of gorse spreading. In B.C. there are no natural controlling agents

the hard seed coat provides protection from abrading gravels in streambeds. Gorse can quickly become established on disturbed sites within its range where a lack of moisture and nutrients limits the rapid establishment of native vegetation. As gorse has not become well established throughout its potential range in B.C., the most effective control is to prevent it from spreading further.

How can the spread of gorse be prevented?

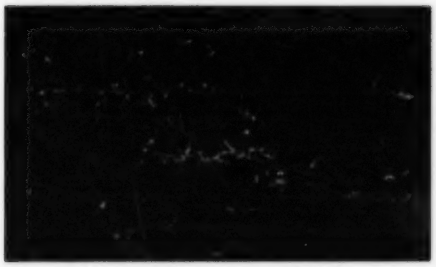
- Early detection and prompt control of gorse in newly infested areas.
- Sites prone to gorse infestation should be planted with preferred vegetation immediately following disturbance.
- Do not plant gorse. Be aware of its methods of spreading.
- On removal of gorse from a location, plant alternate vegetation immediately, fertilize and water if necessary to help new vegetation become established. Use native or less aggressive vegetation adapted to the site conditions.
- Inform others about the danger that gorse poses to the plant diversity of our forests.

How is existing gorse controlled?

Gorse is not killed by cutting or burning the top growth. Gorse is difficult to eradicate and, in most instances, requires a combination of treatments to remove it from a site. Control methods include:

- Burning followed by herbicide treatment of the new sprouts. Gorse burns well, but tends to resprout from the burned stumps within one month. Treatment with a herbicide may control the new sprouts. However, after a fire, conditions are ideal for banked seed to germinate, which may necessitate further herbicide treatments or grazing.
- Cutting or chopping followed by fire, grazing or herbicides. The gorse is cut manually or with mechanical implements such as bulldozers. It is then burned to remove the mature vegetation and to encourage sprouting. The resprouts can be grazed by goats within three months, or treated with herbicides.
- Cutting followed by seeding. The gorse is cut to ground level and the site is seeded to a cover crop such as grass. The site is monitored periodically for gorse sprouts, which are removed.
- Grazing. Although sheep and goats have low preferences for gorse, they have been used to control it successfully in New Zealand.
- Herbicides. Several herbicides have proven effective in controlling gorse. For detailed information on chemical

control, contact the local Forest Service office or a certified weed control specialist.



Once gorse becomes established it can be very difficult to control. Gorse is best controlled by not providing it with an opportunity to become established

What is being done?

The British Columbia Forest Service is:

- Investigating the impact of gorse on crop trees and other non-timber resources. The investigation includes the extent of its spread into forested areas, and the fire risk areas where gorse is concentrated.
- Determining effective means to combat gorse in British Columbia. Control methods used by other jurisdictions are being investigated.
- Tracking the present geographic location and spread of gorse.
- Informing the public about the present locations and control of gorse. If you know of any areas to which gorse has recently spread, please contact your local Forest Service office.

Conclusions

- Activities such as road development and timber harvesting can cause soil disturbance, providing an opportunity for gorse to establish.
- It is important that gorse be recognised as a threat to biodiversity.
- Preventative measures should be taken to limit its spread.

For more information:

Contact the nearest British Columbia Forest Service regional or district office or write to:

Forest Practices Branch,
P.O. Box 9520 Stn. Prov. Gov.
Victoria, British Columbia,
V8W 9C2

Contact Tim Ebata *tim.ebata@gems8.gov.bc.ca.* if you have comments on the presentation of this information.